UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Review by Region III of the Final Report on The Drake Superfund Site Dated April 16, 1998 from the Office of the Ombudsman, OSWER **DATE:**

FROM: W. Michael McCabe
Regional Administrator

TO: Timothy Fields, Jr.
Acting Assistant Administrator
Office of Solid Waste and Emergency Response

We have reviewed the "Final Report on the Drake Chemical Superfund Site" dated April 16, 1998 from the Office of the Hazardous Waste and Superfund Ombudsman. Our general response to this report is that there are no new concerns raised that would cause the Region to stop the incineration cleanup of the highly contaminated soils at the Drake Site.

Answers to issues raised in the report can be found in the regional Site files. An index of that file was supplied to the Ombudsman in July of 1997, and again on January 15, 1998. In addition to supplying the index, the Region invited the Ombudsman to come to the Region to review the records and to interview any person on the Drake cleanup team who might have knowledge of issues of interest to the Ombudsman. Moreover, a citizens' group, Arrest the Incinerator Remediation, Inc., (A.I.R.) has brought litigation since 1996 in Federal court to halt the operation of the incinerator and many of the alleged issues raised by the Ombudsman in his interim and final report were issues brought by A.I.R. Many issues were answered in court proceedings before the Federal district court in Williamsport, Pennsylvania.

The Ombudsman's report never refers to these court proceedings, which in fact answered questions that the Ombudsman purports to raise in his reports. By way of example, Appendix E of the report is a sworn statement of Kurt Davis taken in Williamsport, Pennsylvania, on March 2, 1998. In attendance at the testimony was the trial counsel for A.I.R. and one of A.I.R.'s officers. What the Ombudsman's report omits is that two weeks after the Ombudsman took Mr. Davis' testimony, Mr. Davis testified in a Federal court hearing for a temporary restraining order against the incinerator's operation. After hearing Mr. Davis and others testify about alleged violations of Pennsylvania fugitive dust regulations, the Federal court found on March 19, 1998, that the testimony "....indicates that OHM (the operator of the incinerator) is presently in compliance with the regulations."

Another example of a prior issue being raised again and again is that the report's principle finding alleges that the Region did not properly "characterize" the contamination at the Site during its decision making process for the 1988 Record of Decision. Specifically, in finding "A" the report refers to an incineration "treatability study" which the Ombudsman's report believes supports the proposition that a 1991 Ash Treatability Study (Ash Study) showed that the soil at the Drake Site is

not contaminated to the degree described in the 1988 Remedial Investigation/Feasibility Study (RI/FS) for the Site. As records from the Site files show, this is not the case. The Ash Study was conducted to determine the composition of the ash which would be produced by the soil incineration process. This information is in the Drake files and specifically, a memorandum which addresses this very issue was supplied by the Region to the Ombudsman on March 31, 1998. In addition, this memorandum has been a part of the Site file for at least the last four years.

The Region will continue to respond to A.I.R. and the public regarding the soil incinerator process and we continue to believe that constructive input from all parties will be helpful to all the stakeholders at the Drake Site during the production burn process of the cleanup. However, to have to respond repeatedly to issues which have already been addressed by the Region is counterproductive to the cleanup process and unduly obscures the resolution of the complex issues involving the Drake Site.

In conclusion, for these and the numerous reasons detailed in the attachments to this memorandum, we believe that the incineration method for cleanup of the Drake Chemical Superfund Site remains the safest and best method of returning the property to productive use. We will, however, implement the Ombudsman's recommendations to provide a fact sheet on Beta-napthalamine sampling and the Site characterization. In addition, although we continue to believe that there is not a need to install a scrubber system in the ash handling area to protect public health, we have installed such a system to provide even further protection against the possibility of dust rising from the incinerator operations.

Attachment

Point by point response to findings of fact.

Findings “A” and “B”

“...the incineration treatability study ...indicates that there is virtually no contamination.” Quite the contrary, as the record shows, the Drake Site is highly contaminated. This was determined by EPA in the Remedial Investigation (“RI”) and during the 16 years that the EPA has cleaned and studied Site conditions. As discussed above, in 1993 American Color & Chemical Corp.,(“AC&C”) and Beazer East, Inc.,(“Beazer East”) two owners of the adjacent RCRA site, who EPA had sued for groundwater contamination and possible soil contamination of the Drake Site in 1992, petitioned the Region to reopen the 1988 Record of Decision in regard to the soils incineration decision. At the time they filed their petition, the companies were in heavy litigation with EPA regarding their potential liability at the Drake Site for groundwater and soils.

The companies were eager to change EPA’s decision to incinerate because had they been found liable in the court case for soil contamination and they would have had to pay for the cost of the incineration project. Their petition was given great scrutiny by the Region, and on September 30, 1994, the Region issued its determination not to re-open the 1988 Record of Decision. In its decision the Region considered the companies’allegations that a 1991 incinerator ash treatability study had shown that the Site was not heavily contaminated and found no basis for this proposition. In its determination, the Region stated the reason for the ash study and, among other things, stated:

> “Accordingly, there was no need to incur as part of the Ash Study the expensive sampling costs that could detect organic compounds at the detection level used in EPA’s Remedial Investigation which led to the decision to incinerate. The need for the Ash Study was based on the question of what level of metal contamination would remain in the ash.... The Ash Study was not related to the question of extent of organic contaminants in the Drake soils, and the Ash Study was not designed to produce results relevant to that question.”

In a federal Consent Decree signed on February 14, 1996, the EPA settled its cost recovery lawsuit against AC&C and Beazer. Under the terms of the decree, without an admission of any liability for any contamination at the Drake Site, the defendants paid the Superfund $3.6 million dollars for the United States past costs at the Drake Site and paid $400,000 to the Commonwealth of Pennsylvania for the costs it had incurred at the Site. As a part of the settlement, the defendants agreed to implement and finance cleanup of the groundwater at the Drake Site, which at the time EPA estimated to cost upwards of $20 million dollars.

The Consent Decree,in Section XXII,released AC&C and Beazer for costs or actions pertaining to the incinerator soil cleanup. This release was given because during the four years of cost recovery litigation(the United States filed its cost recovery complaint on September 28, 1992) no evidence was discovered which supported a legal theory that AC&C

or Beazer was liable under the Superfund law for the soils contamination at the Drake Chemical Site. The consent decree pertained soley to liability for groundwater contamination. This consent decree was supplied to the ombudsman by the Region early on in his investigation.

Finding "C"

Here again the report cites AC&C and Beazer's petition to reopen the Record of Decision and refers to comments made by USACE personnel concerning a contractor's reliance on the Ash Study. AC&C and Beazer identified a section from a contracting document called a Request for Proposal ("RFP"). They stated that since the incinerator contractor was going to rely on the Ash Study to prepare the bids for the incinerator, the low levels of detection of organic chemicals in the Ash Study showed no need to incinerate the Drake soils. Here again the purpose of the Ash Study was taken out of context. As stated in its determination not to reopen the Record of Decision the Region stated:

> " A full reading of the RFP makes it clear that the reason a contractor was to rely on the Ash Study was to be able to estimate disposal restrictions that pertain to metals that would not be destroyed in the incinerator. Other requirements in the RFP would ensure that a treatment process would take place that would destroy the organic material."

The Summary of Opinion of the ombudsman report infers that because some early suggestions for additional site characterization by the USACE were not followed, the incinerator may have been improperly designed. This is directly contradicted by the trial burn emissions testing which showed that the emissions met and in most cases exceeded all regulatory standards. Additionally, the incinerator has been routinely meeting the ash laydown criteria.

In summary, with regard to findings A,B, and C of the report, the Region refers you to Judge Muir's decision on the TRO hearing.

Finding "D"

The discussion of phenols in groundwater migrating from the AC&C site into the connecting aquifer under the Drake Site does not affect the cleanup soils remedy for the Drake Site. (See the attached memos from F. Vavra to the file for a discussion of the RCRA issues raised by the Ombudsman.)

As to the report's finding that Kilsdonk Chemical Company (Drake Chemical Company's predecessor at the Drake Site) disposed of phenols at the Drake Site thus triggering a "RCRA listing" for dioxin at the Drake Site, the Region disagrees and refers you to the above referenced memos by F. Vavra.

On August 7, 1996, the Region issued the results of an investigation entitled," RCRA Dioxin Listed Wastes Will Not Be Treated In the Drake Chemical Superfund Site

Incinerator." The investigation occurred in response to comments raised by the A.I.R. citizens' group in litigation and elsewhere.

Because of the comments received by A.I.R., EPA reinvestigated whether or not RCRA listed wastes were produced, manufactured or discarded at the Drake Chemical Site. The investigation identifies the RCRA listed wastes (listed at 40 C.F.R. Section 261.31(a) which require a destruction and removal efficiency ("DRE") of 99.9999% instead of the more general DRE for an incinerator of 99.99%. "Phenol" is not one of the RCRA listed wastes. (Attached as Attachment 2 is the August 7, 1996 memorandum, "RCRA Dioxin Listed Wastes Will Not Be Treated In The Drake Chemical Superfund Site Incinerator." This memorandum is in the Site file and was a handout at the September 19, 1996 Public Meeting in Lock Haven, PA., which was chaired by the Ombudsman.

Finding "E"

There appears to be no response required for this finding. The Region would like to correct several statements in the finding, however: The defendants under the February 14, 1996 Consent Decree did not pay $4 million for the groundwater remedy. As stated above, these parties paid the United States $3.6 million for the United States'past costs at the Drake Site and they paid the Commonwealth of Pennsylvania $400,000 for the State's past costs at the Site. By the terms of the consent decree, AC&C and Beazer will finance and implement the groundwater remedy.

Finding "F"

Assuming for sake of argument that the laboratory named in this finding used all appropriate protocls, quality assurance/quality control and used proper scientific methods, the Region responds as follows:

The compounds listed in Finding F are less thermally stable and thus easier to destroy in an incinerator than the selected Principal Organic Hazardous Constituents (POHCs)used during the Trial Burn. Since the Trial Burn indicated the destruction removal efficiency (DRE) for the POHCs was greater than 99.99%, the compounds discussed in this finding would be adequately destroyed in the incinerator.

Finally, this finding again makes the statment that," the site is not homogenous with respect to pollutants." While the Region agrees with this statement, this does not change the fact that the Drake Site soils are significally contaminated throughout the Site. This is one of the major reasons why EPA selected incinerator as the technology to destroy the contamination in the soils. EPA could not separate out "hot" spots of contamination and just incinerate the "hot" spots. All of the soil requires decontamination in the incinerator. The issue of "homogenity" of the contamination at the Site was addressed fully in the Region's September 30, 1994 determination not to not reopen the Drake Record of Decision.

Finding "G"

The report states that B-Naphthylamine (BNA) "is not reported to occur naturally in the environment". This statement is incorrect. Although synthetic forms of BNA were used in the dye and rubber industries prior to discontinuation of the manufacture and importation of this chemical in 1975, non-synthetic (i.e., natural) forms of this chemical also occur in coal tar and cigarette smoke (NIEHS, 1994).

BNA is a known bladder carcinogen in experimental animals and humans. The presence of BNA in the Drake Site soils is one of the primary reasons why EPA is cleaning up this Site under the Superfund program. When the soils incineration process is completed, this highly contaminated site can be returned to use in the community. Otherwise the Site would have to lie fallow forever with the contaminants entombed within and leaching in groundwater toward the Susquehanna River. BNA is currently regulated by the Occupational Safety and Health Administration (OSHA). The Ombudsman states "there is no permissible exposure level of air concentration for BNA since for most carcinogens it is assumed that any increase in exposure will increase cancer risk". Once again this statement is not accurate. Under their old policy, the National Institute for Occupational Safety and Health (NIOSH) recommended that "occupational exposures to carcinogens be limited to the lowest feasible concentrations" and typically did not establish recommended exposure limits (RELs) for chemical carcinogens. However, based on advances in science and in approaches to risk assessment and risk management, NIOSH is now beginning to develop RELs for occupational carcinogens that may be associated with "residual risk" (NIOSH, 1997). Although a NIOSH exposure limit (i.e., REL) has not been developed for BNA, it is most likely due to the fact that this chemical is no longer occupationally used, rather than because "any increase in exposure will increase risk".

The statement, that there is "no permissible exposure level ... for BNA, " does not reflect EPA's position on carcinogenic substances or the standard approach to such contaminants at Superfund sites. EPA's goal under the Superfund program is to reduce potential cancer risks to the one-in-one million level. It is EPA's position that such a low level of risk is fully protective of human health and could not be distinguished from background causes of cancer.

References:

NIEHS, 1994. Seventh Annual Report on Carcinogens, 1994 Summary. U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program.

NIOSH, 1997. NIOSH Pocket Guide to Chemical Hazards. U.S. Department of Health and Human Services, Public Health Service, Centers for Diseases Control and Prevention, National Institute for Occupational Safety and Health.

Finding "H"

The Region responds to this finding as follows: BNA monitoring at the perimeter is required by the PADEP Air Equivalency Permit. Permit Article 8 states "During the

contaminated soils remediation air sampling shall be conducted at 4 permanent samplings sites located on the project perimeter as identified in the Perimeter Air Sampling Plan." This plan includes periodic time integrated monitoring for BNA.

BNA monitoring of the stack is incorporated by reference into the Trial Burn Plan in articles 12 and 14 of the PADEP Air Equivalency Permit. The Trial Burn Plan Appendix G Table G-4-8a includes BNA as one of the target analytes.

Regarding the statement pertaining to perimeter air testing for toluene, chlorabenzene and tetrachlorethene, the PADEP Air Equivalency Permit, Article 8 requires, in addition to the monitoring referenced, periodic time integrated sampling and analysis for (Total Suspended Particulate) TSP, 14 metals, and 19 SVOCs. Additionally, special monitoring for BNA at the four perimeter air monitoring stations has been added at a monitoring frequency of every sixth day. To date, time integrated monitoring has not detected BNA at the site perimeter.

Finding “I”

This finding calls for no response, however, the high presence of BNA in the Drake Site soils is a major factor in the Region’s decision to incinerate the BNA-contaminated soils at the Drake Site, rather than leave them in the environment of Lock Haven, PA.

Finding “J”

Incinerator performance is measured first by destruction and removal efficiency (DRE) which is a comparison of the amount of a principal organic hazardous constituent (POHC) in the waste feed versus the amount of that POHC discharged in the exhaust stack gas, and then measured separately by ash quality. The destruction efficiency discussed in this finding combines the two measurements into one which is not what is required by the RCRA incinerator regulations and/or by the performance specifications. The Ombudsman’s calculations appear to be soil removal efficiencies, not DRE.

The Region has previously responded to the above comment in the document DRAKE CHEMICAL SITE FINAL RESPONSIVENESS SUMMARY FOR PUBLIC COMMENTS ON THE DRAFT INCINERATOR FULL-SCALE OPERATION RISK ASSESSMENT (NOVEMBER 1997) dated February 27, 1998 as follows:

> "Although [this] may be true, it does not effect the conclusions of the risk assessment or the demonstration of compliance with the RCRA incinerator performance standards. The trial burn DRE tests were designed to measure the incinerator's performance on compounds in the gas stream. It was explicitly not intended to measure the unit's efficiency at removing constituents from the soil. EPA has established soil cleanup criteria and is committed to seeing that the treated soil meets that criteria. No ash will be returned to the site unless it meets the cleanup criteria."

Additionally, meeting the final treated soil criteria was not the goal of Risk Burn Condition 1 and Trial Burn Condition 1. The goal of the two conditions was to create worst case stack

emissions and operating conditions by utilizing high soil feed rates and lower operating temperatures. Stack emissions from these two conditions met the required specifications. For Risk Burn Condition 2 and Trial Burn Condition 2, however,the lower feed rates and higher temperatures did result in thermally treated soil that met the cleanup criteria. The “soil removal efficiencies” presented in this finding consider only Risk Burn and Trial Burn Condition 1 results. If "soil removal efficiencies" were calculated for Risk Burn Condition 2 and Trial Burn Condition 2 they would be 100% because the thermally treated soil samples were all non-detect for BNA and Fenac.

Findings “K” and “L”

The sampling method for BNA has been modified. In fact, ATSDR's PETITIONED HEALTH CONSULTATION NO. 3 recognized that the sampling and analytical method has been changed. ATSDR’s conclusion Number 9 contains the following statement, "ATSDR considers that the modified OSHA 93 method proposed by EPA would be adequate in detection [of] (-naphthylamine in ambient air at Lock Haven . . .."

In regard to the statement in the report that"[t]hrough evaluation of laboratory control data, as indicated in monthly sampling reports, is inhibited by the reporting of recoveries as averages rather than reporting a recovery value for each sample", the reporting method has been changed and individual recoveries have been reported since April 1997.

Finding “M”

The contract specifications required monitoring for BNA using method TO-13. Based on this, the contractor developed the Perimeter Air Sampling Plan included BNA as a target analyte for TO-13 and estimated the detection limit within this plan. Based on discussions with MRI, the BNA detection limit listed in the Perimeter Air Sampling Plan was a best scientific judgment estimate of the detection limit based on the performance of the method with other compounds. Additionally, although the recovery of the BNA surrogate was below the targeted recovery, studies were performed at higher spike levels, approaching the Pennsylvania Air Toxic Guidance (PA-ATG) level, and the recoveries in these experiments documented that TO-13 did work at levels greater than the estimated detection level but less than the PA-ATG. In an effort to detect BNA more stringent risk based levels than the PA-ATG level, modified OSHA 93 Method has been put into use at the site. As stated earlier, ATSDR considers this method adequate for BNA in ambient air.

As for worker safety, any reports of respirator breakthrough are brought to the attention of the site health and safety officer. Together with the site appointed certified industrial hygienist, the site health and safety officer investigates the cause of the reported breakthrough and takes necessary steps to ensure that site workers are adequately protected.

In addition, as part of the health and safety program, workers periodically wear patches on their skin and under their protective gloves that can detect the presence of BNA. As a matter of clarification, no positive results have occurred to date on patches worn by workers.

Finding “N”

During his tenure as an employee with the Corps of Engineers at the Drake site, Mr. Davis voiced concern that steam from the wet ash drag might be creating dust that might carry within it hazardous substances which were being cleaned in the incineration process. In an effort to determine if the steam contained contaminants (specifically BNA and fenac, since some of the ash during the trial burn phase did not meet the established soil cleanup criteria for these contaminants), the steam was sampled using modified USEPA Method 5 and found not to be contaminated. These analytical results have been made available to the public. In addition, Mr. Davis was informed that the steam did not contain contaminants.

During the temporary injunction proceeding brought by A.I.R. and tried to the federal court on March 16 and 17, 1998, testimony was provided by a PADEP official who testified that on two instances in March of 1998 when dust did arise from the ash conveyor area on the Site, subsequent sampling of the ash which was the source of that dust revealed non-detects for contaminants.

Finding “O”

The contractor provided Piping and Instrument Drawings to the USACE, not as a requirement of the contract for the incinerator, but for information only. When provided, it was clearly understood that these drawings contained Confidential Business Information, and did not contain several engineering changes made during the construction of the unit and could not, therefore, be considered as the "as-built" drawings for the incinerator. In fact, these drawings specifically indicated that the wet dust collection system was an optional piece of equipment proposed for the incinerator.

Although the USACE believed that the past system of water fog nozzles and steam containment adequately protected the health and safety of the Lock Haven community, the Drake Remediation Team believes that mitigation of any dust arising from the incineration operations is appropriate and the Region has addressed this concern of Mr. Davis and the recommendation of the Ombudsman that a wet dust collection system be placed on the incinerator. As such, OHM Remediation Services Corp. recently installed an additional piece of equipment to reduce further the likelihood of processed soil escaping in steam produced during the soil-cooling process. This scrubber will provide an extra measure of protection to reduce the potential for and perception that dust is being created by the incinerator’s operation.

Finding “P”

The Region and the USACE were trying to minimize dust from Site operations in November of 1996. In fact, a steam mitigation meeting was held on November 26, 1996. Minutes from that meeting show that OHM collected and analyzed industrial hygiene samples, steam samples, and TDF pad dust samples to ensure that workers were adequately protected. Implementation of steam mitigation measures such as tarps, enclosing the radial stacker conveyor, skirting and wind driven turbines reduced steam on the TDF pad and in the ash handling building.

At all events, the Region has seen to it that the wet dust collection system was added to the incinerator and it will be operated to minimize dust from operations in the future.

Finding “Q”

The USACE has informed the Region that although its former employee, Mr. Davis, may have reported that "Steam is clean" was a Drake site safety slogan, the USACE says that such a phrase was never an official slogan. However, based upon analysis the Region believes that steam at the Site is and continues to be safe. Further, the Region will take all actions necessary to ensure that escape of any steam from Site operations will be minimized now and in the future.

Finding “R”

The referenced NOVs from PADEP were for dust from the treated or clean soil. These two NOVs were introduced by counsel for A.I.R. at the hearing for the temporary injunction held in federal court on March 16 and 17, 1998. The PADEP official responsible for issuing the NOVs testified that the source of the dust was from soil that had been cleaned in the incinerator. The PADEP official also stated that the cleaned soil source was subsequently sampled and the sampling can back non-detect. After hearing testimony on the issue of the NOVs, on March 19, 1998 the court dismissed the request for a temporary restraining order. As discussed above, in its decision the court concluded that the hearing testimony indicated that the incinerator’s operator was presently in compliance with Pennsylvania’s regulations relating to the emission into the outdoor atmosphere of a fugitive air contaminant or fugitive emission.

Finding “S”

Precautionary action has been taken at the former Drake Chemical Incinerator Site in the form of a detailed evaluation of risks associated with site contaminants and incineration by-products; public participation in the form of review and comment on the risk assessment; and engineering controls in the design of the Drake Chemical Site incinerator that are intended to minimize potential human and ecological exposures and risks.

Public participation has been included in the risk assessment process for the former Drake Chemical Incinerator Site in the form of public review and comment on the risk assessment. The Region believes that the entire risk assessment process for the incinerator has been “precautionary" and that the public has been very involved in the process during the last several years. When the Regional Administrator for Region III in the Fall of 1995 promised the public a risk assessment for the trial burn for the incinerator, he set the stage for an unprecedented risk analysis. That process for this analysis has now consumed nearly three years and includes entensive risk assessments of the trial burn and for the production burn. All of the risk analyses indicated that the incinerator is safe to operate. Public involement has been extensive, with EPA holding numerous public meetings and soliciting comments on all of the major risk assessment documents.

Finding “T”

The question of weather data for Lock Haven has been discussed since the Trial Burn Risk Assessment was released in June 1996. EPA developed a state-of-the-art air modeling procedure to compensate for the lack of local weather data in the Trial Burn report and confirmed the accuracy of that approach in the November 1997 Risk Assessment for the production burn. In Section 8 of that report, EPA presents the analysis of five years of meteorological data, as recommended by ATSDR. EPA is confident that the air modeling in the risk assessment is thorough and accurate.

Findings U -Z.

In these six comments, it appears that the Ombudsman is presenting issues voiced by one of the fourteen members of the Risk Assessment Forum's Peer Review Committee. It is not clear why the Ombudsman has chosen to highlight only the negative comments from this particular peer reviewer or why the Ombudsman chose to ignore the many favorable comments that the Agency received during the peer review process. It should also be noted that all of the issues raised in the following comments have been addressed in EPA's Feb. 6, 1998 Draft Response to Peer Review Comments and EPA's Feb. 27, 1998 Final Response to Public Comments on the November 1977 Risk Assessment. Nevertheless, EPA would like to offer the following responses to the issues labeled "U" through "Z" in the Ombudsman's report:

U. This commenter raised the issues of background air quality and health in the Lock Haven area, arguing that this information should have been included in the risk assessment. EPA does not agree with this argument for two reasons. First, the Drake incinerator is a temporary facility that will operate for approximately two years and then be dismantled. It is not a permanent facility and will have no significant long term effect on the local environment. Second, operation of the incinerator will contribute such minor incremental risks to the local area that they will essentially be indistinguishable from the current, background situation. We have undertaken an extensive biological sampling effort using moss bags, natural moss and maple leaves that are sampled and analyzed on dioxin and heavy metals on a 55 day cycle. The risk assessment for the production burn indicates that the incinerator will contribute much less than one percent of the existing background levels of contaminants. For these reasons, EPA does not believe that the incinerator would have any noticeable impact on background air quality or health related issues in the Lock Haven area.

V. This comment addresses a number of issues, including particulate emissions from the stack, dust from the soil, asthma, congestive pulmonary disease and the uncertainty analysis in the risk assessment. All of these issues have been considered by the Region during the risk assessment process for the incinerator, either in the November 1997 Risk Assessment or in the responsiveness material that was developed following the peer review conference in January and the public meeting in February. Also, in response to the comment about uncertainty, the current risk assessment for the production burn already presents a high end, not "central" estimate of risk. This is another example of the very conservative nature of the risk analysis. The Region is confident that the incinerator is safe to operate and will have no

adverse effect on public health.

W. We believe that the November 1997 Risk Assessment does include an appropriate analysis of uncertainties. One whole chapter of that report (Section 8, "Uncertainty and Sensitivity Analysis") is devoted to this issue and every other chapter includes an uncertainty discussion of the technical issues in that section. For instance, in Section 8, EPA examined such issues as the "uncharacterized fraction" of emissions and exposure to contaminants through "snow ingestion." None of these potential issues made significant changes in the risk calculations and none of these issues would change the overall conclusions of the risk assessment.

X. The Region has addressed the uncertainty issue many times during the last several months. It is clear that there are many interpretations of how uncertainty should be addressed and how it should be incorporated into the decision-making process. The Region is confident that the November 1997 production burn Risk Assessment includes an appropriate discussion of uncertainty issues and that the analysis does support the decision to proceed with the soils incineration cleanup.

Y. The Ombudsman comments that this peer reviewer discussed these issues several times during the peer review process. The Region takes the peer review process very seriously and examined all of the issues that were raised in the pre-meeting comments and during the peer review conference itself. Region III's general conclusion was that the peer reviewers did not identify any issues that would change the overall conclusions of the risk assessment. There were, of course, many issues raised during the peer review process. The Region responded to the most significant ones in the February 6, 1998 "Draft Interim Responsiveness Summary." Additional responses are being prepared and will be available shortly. However, the bottom line conclusion from the peer reviewers regarding the risk assessment is that as the Ombudsman states, it is " commendable and credible"(See, report at page 9). And this commendable and credible risk assessment concludes it is safe to operate the incinerator.

Z. This comment supports Region III's general conclusion about the peer review process, as discussed above. It is was expected that thoughtful experts may disagree on complex technical issues. As stated, however, the Region is satisfied with their conclusions that the risk assessment is "commendable and credible" and "well conceived and executed" and is prepared to proceed on that basis.